

# ***Aggregate Industries Nelson Mine Backwater Project***

Prepared for

Aggregate Industries – MWR, Inc.

February 2022

# Scoping Environmental Assessment Worksheet

Aggregate Industries – MWR, Inc.

Nelson Mine Backwater Project

February 2022

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## **Abbreviations**

AMSL	Above Mean Sea Level
Aggregate Industries	Aggregate Industries – MWR, Inc.
BMPs	Best Management Practices
City	City of Cottage Grove
EAW	Environmental Assessment Worksheet
ECS	Ecological Classification System
EIS	Environmental Impact Statement
EMS	Environmental Management System
EQB	Environmental Quality Board
FEMA	Federal Emergency Management Agency
GPS	Global Positioning System
HUC	Hydrologic Unit Code
IPaC	Information for Planning and Conservation
MDH	Minnesota Department of Health
MDNR	Minnesota Department of Natural Resources
MNRRRA	Mississippi National River and Recreational Area
MPCA	Minnesota Pollution Control Agency
MRCCA	Mississippi River Corridor Critical Area
NHIS	Natural Heritage Information System
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRCS	Natural Resource Conservation Service
PLS	Public Land System
PRCV	Public River Corridor View
RGU	Responsible Government Unit
ROS	Rural and Open Spaces
SHPO	State Historic Preservation Office
SSTS	Subsurface Sewage Treatment Systems
SWPPP	Storm Water Pollution Prevention Plan
UPCI	United Pentecostal Church International
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

## ENVIRONMENTAL ASSESSMENT WORKSHEET

**This Environmental Assessment Worksheet (EAW) form and EAW Guidelines are available at the Environmental Quality Board's website at:**

<http://www.eqb.state.mn.us/EnvRevGuidanceDocuments.htm>. The EAW form provides information about a project that may have the potential for significant environmental effects. The EAW Guidelines provide additional detail and resources for completing the EAW form.

**Cumulative potential effects** can either be addressed under each applicable EAW Item or can be addresses collectively under EAW Item 19.

**Note to reviewers:** Comments must be submitted to the Responsible Government Unit (RGU) during the 30-day comment period following notice of the EAW in the *EQB Monitor*. Comments should address the accuracy and completeness of information, potential impacts that warrant further investigation and the need for an EIS.

### 1. Project Title

Aggregate Industries - MWR, Inc. – Nelson Mine Backwater Project

### 2. Proposer

Contact person: Patty Bestler, Aggregate Industries, MWR, Inc.  
Title: Regional Manager, Environmental & Land Services  
Address: 2815 Dodd Road, Suite 101  
City, State, ZIP: Eagan, MN 55121 Phone: (612) 214-8577  
Email: [patty.bestler@aggregate-us.com](mailto:patty.bestler@aggregate-us.com)

### 3. RGU

Contact person: Emily Schmitz, City of Cottage Grove  
Title: Senior Planner  
Address: 12800 Ravine Parkway  
City, State, ZIP: Cottage Grove, MN 55016 Phone: (651) 458-2874  
Email: [eschmitz@cottagegrovemn.gov](mailto:eschmitz@cottagegrovemn.gov)

#### 4. Reason for EAW Preparation

Required:

EIS Scoping

Mandatory EAW

Discretionary:

Citizen petition

RGU discretion

Proposer initiated

If EAW or EIS is mandatory give EQB rule category subpart number(s) and name(s):

4410.4400, Subpart 9B – Nonmetallic Mineral Mining; for development of a facility for the extraction or mining of sand, gravel, stone, or other nonmetallic minerals other than peat, which will excavate 160 acres of land or more to a mean depth of 10 feet or more during its existence.

4410.4400, Subpart 9C – Nonmetallic Mineral Mining; for development of a facility for the extraction or mining of sand, gravel, stone, or other nonmetallic minerals other than peat, which will excavate 40 or more acres of forested or other naturally vegetated land in a sensitive shoreland area or 80 or more acres of forested or other naturally vegetated land in a non- sensitive shoreland area.

#### 5. Project Location

- County: [Washington](#)
- City/Township: [City of Cottage Grove](#)
- PLS Location (1/4, 1/4, Section, Township, Range): See **Table 1**.

**Table 1 Project Public Land System (PLS) Location Summary**

1/4	1/4	Section	Township	Range
NW	NW	4	26	21
-	NW	5	26	21
-	NE	5	26	21
NE	NW	6	26	21
NW	NE	6	26	21
NE	NE	6	26	21
NE	SE	31	27	21
SE	SE	31	27	21
SW	SE	32	27	21
SE	SE	32	27	21
SW	SW	33	27	31

- Watershed (81 major watershed scale): [Mississippi River – Twin Cities \(HUC4 Name: Upper Mississippi\)](#)
- GPS Coordinates: [See Table 2.](#)
- Tax Parcel Numbers: [See Table 2.](#)

**Table 2 Global Positioning System (GPS) Coordinates and Tax Parcel Numbers**

<b>Tax Parcel Number</b>	<b>Latitude</b>	<b>Longitude</b>
163-3302721330001	44.77758488500	-92.94198198520
163-3202721440002	44.77666821470	-92.94836040730
163-3202721430001	44.77714686750	-92.95255275260
163-3102721420001	44.77863124800	-92.97066352210
163-3102721410003	44.78087795230	-92.96755047910
163-0602621210001	44.77510394650	-92.97694966380
163-0602621120001	44.77493285630	-92.97239140150
163-0602621110001	44.77421830740	-92.96702399980
163-0502621240001	44.76935765570	-92.95648125930
163-0502621230001	44.77128750990	-92.96338012630
163-0502621210001	44.774711109220	-92.95920326810
163-0502621140001	44.77055634310	-92.94568101560
163-0502621130001	44.76873295830	-92.95219714840
163-0502621110001	44.77494164470	-92.95148852920
163-0402621220001	44.77172643260	-92.94397069840

**At a minimum attach each of the following to the EAW:**

- County map showing the general location of the project ([Figure 1, Appendix C](#))
- U.S. Geological Survey 7.5 minute, 1:24,000 scale map indicating project boundaries (photocopy acceptable) ([Figure 2, Appendix C](#))
- Site plans showing all significant project and natural features. Pre-construction site plan and post-construction site plan. ([Figures 3 through 13, Appendix C](#))

**6. Project Description**

- a. Provide the brief project summary to be published in the *EQB Monitor*, (approximately 50 words).

[Aggregate Industries – MWR, Inc. \(“Aggregate Industries”\)](#) is proposing to move its mine area, which supports the existing Nelson Sand & Gravel Mine Facility, onto an approximately 395-acre

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parcel of privately owned land that the company leases in the backwaters of the Mississippi River. Although it leases the mining area, Aggregate Industries owns the land where the processing plant infrastructure is located. The planned shift in mine area would take place across an approximately 20 to 25-year period.

- b. Give a complete description of the proposed project and related new construction, including infrastructure needs. If the project is an expansion include a description of the existing facility. Emphasize: 1) construction, operation methods and features that will cause physical manipulation of the environment or will produce wastes, 2) modifications to existing equipment or industrial processes, 3) significant demolition, removal, or remodeling of existing structures, and 4) timing and duration of construction activities.

### **Proposed Project Overview**

The existing Nelson Sand & Gravel Mine Facility will exhaust its current minable reserves in approximately five years given the current rate of mining, market trends, and geologic variations at the site. Aggregate Industries is proposing to move its mine area, which supports the existing Nelson Sand & Gravel Mine Facility, to mine additional reserves on a privately owned parcel of land in the backwaters area of the Mississippi River (proposed Project). These reserves would be used to supply construction-quality aggregate to the Twin Cities construction industry. Current mining means and methods at the existing plant would be employed to mine the reserves. Processing techniques, processing equipment, equipment run rates, hours of operation and staffing at the existing Sand & Gravel Mine Facility would all remain unchanged. In addition, the current river-based transportation system would remain unchanged; assuming consistent market conditions, barge capacities and annual trips are expected to remain the same. Barges would continue to be loaded at the existing dock wall/load-out location of the Nelson Sand & Gravel Mine Facility using the same equipment (**Figure 3**).

### **Project Background and Existing Operations Overview**

The proposed Project would change the location where active mining occurs; no changes in production, processing facility, or operations are proposed. Aggregate Industries has been mining at the existing Nelson Sand & Gravel Mine Facility since the early 1950s when the J.L. Shiely Company (now known as Aggregate Industries) entered into a lease agreement with the private landowner. A form of this lease agreement remains in place between the private landowner and Aggregate Industries today.

The proposed Project was formerly upland that became inundated by the impoundment created with the construction of Lock and Dam #2 in 1930. This impounded area, upstream of Lock and Dam #1 is known as Pool 2 of the Mississippi River (**Figure 4**). The approximately 395-acre proposed Project area analyzed in this document is bound on the north by Lower Grey Cloud Island and on the south by barrier islands created by the U.S. Army Corps of Engineers (USACE)



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to deposit dredge spoils (**Figure 5**). Since 1995, a twin-clamshell, floating dredge unit has been used to excavate raw aggregate materials from a created lake located on Lower Grey Cloud Island (**Figure 3**). This floating dredge unit is approximately 100 feet by 100 feet in size, 60 feet tall, and weighs approximately 500 tons. The floating dredge unit is used to reach aggregate reserves below the water surface and can mine up to 1,200 tons of material per hour, reaching up to 200 feet below the water surface. Material is dewatered in the dredge unit where it is also initially crushed into pieces of aggregate smaller than 6-inches in size. Excess sand is then either screened and pumped to the south shoreline of the created lake or it is pumped to the deepest part of the created lake as part of initial reclamation.

Once excavated, dewatered, and initially crushed by the floating dredge unit, the mined aggregate is transported by conveyor to the processing plant located in the southwest portion of the Nelson Sand & Gravel Mine Facility (**Figure 3**). Processing operations include further crushing, washing, sorting, and stockpiling of aggregate materials by size. Upon processing completion, aggregate products are loaded onto barges or trucks for distribution. The majority of the aggregate is transported on the Mississippi River by barge upstream to Aggregate Industries' distribution yard in St. Paul. A single barge can carry between 1,200 and 1,300 tons of aggregate. In any given year, Aggregate Industries transports approximately 600,000 to 750,000 tons of aggregate by barge to the distribution yard, resulting in approximately 500 to 625 barge trips annually. Up to 20,000 tons of aggregate per year is transported off-site by truck; a truck can typically carry 25 tons of gravel. One barge is equivalent to approximately 45 trucks. Over an entire barging season, the 500 to 625 barge trips are equivalent to 20,000 to 30,000 truck trips. The amount of aggregate transported annually depends on the demand of projects in the greater Twin Cities metro area.

Under current operations, reclamation typically occurs on an annual basis. In recent years, reclamation has consisted of creating a large peninsula within the existing created lake, as well as slope and shore stabilization/establishment and revegetation. In addition, waste sand has been placed in the northeast portion of the site, directly north of the existing conveyor system, to gradually slope the site to the southwest.

Since the floating dredge unit was put in place in 1995, the City of Cottage Grove has granted a variance to the mining ordinance requirement limiting mining operation hours, which has allowed Aggregate Industries to operate 24-hours per day, seven days per week. The variance relating to the hours of operation is reviewed on an annual basis by the City.

At the current rate of mining and market trends and geologic variations at the site, Aggregate Industries estimates that mining will continue for another approximately five years at the existing Nelson Sand & Gravel Mine Facility. The expansion to the new mining area would not take place until mining has been completed within the current mining area. At the time that operations shift to the proposed Project area, the floating dredge unit would be relocated from

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its present location in the created lake to the proposed Project area. Processing of the extracted aggregate within the proposed Project area would occur at approximately the same rate, extending and using the same process and processing equipment. As such, the proposed Project would retain the same number of employees at the facility (there are currently 18 employees) and the same rates of barge and truck traffic.

The existing Nelson Sand & Gravel Mine Facility has provided construction aggregate materials for several projects during its existence, including providing sand for ready-mix concrete operations. Notable recent construction projects the facility has supplied aggregate and/or sand to include: the St. Croix Crossing; Interstate 494/694 Concrete Paving Project; Ayd Mill Road Improvement Project; Abbott NW Transportation Hub Target Field Station in Minneapolis; Eagle Point Elementary School in Oakdale; Woodbury Middle School in Woodbury; Urban Academy in St. Paul; and construction projects at Regions Hospital and Gillette Children's Hospital in St Paul. As identified, a number of construction projects in the Twin Cities and surrounding areas have used aggregate sourced from the Nelson Sand & Gravel Mine Facility.

As with the existing Nelson Sand & Gravel Mine Facility, the aggregate resources in the proposed Project area would contribute to meeting the demand for construction aggregate in the Twin Cities metropolitan market for another 20 to 25 years. The aggregate resources would support construction of residential developments and commercial infrastructure projects such as bridges, roads, schools, and other buildings. Aggregates are a major component in the ready-mix concrete and asphalt production processes.

### **Mining Methods**

Mining would occur in an approximately 230-acre area (proposed mining area) within the proposed Project area using mining practices similar to those currently used at the existing Nelson Sand & Gravel Mine Facility. A floating dredge unit would be deployed into the proposed mining area by excavating a temporary channel approximately 150 feet wide, 400 feet long, and 30 feet deep from the existing mine pit lake, through upland portions of Lower Grey Cloud Island, and into the proposed mining area. The temporary channel would fill with water from adjacent areas to allow the floating dredge unit to be transferred from the currently mined area to the proposed mining area. Immediately following the floating dredge unit relocation, most of the temporary channel would be substantially closed, backfilled, and restored.

An approximately 150-foot by 150-foot (22,500 square foot or 0.5-acre) area of the southern portion of the temporary dredge channel would remain in place to be used as a winter slip for the floating dredge unit. As mining progresses through the proposed mining area, the original winter slip area would be reclaimed, and additional slips would be created closer to the active mining areas. Up to two additional winter slips may be required; however, no more than one slip would be used at a time. At the end of each season of operation, the floating dredge unit would

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be moved from the proposed mining area into a winter slip. The proposed Project's annual operating seasons are expected to typically begin in early March and last through mid-November.

The floating dredge unit would use clam shell buckets to extract raw aggregate reserves from as deep as 200 feet within the proposed mining area. A floating conveyor system would extend from the floating dredge unit to the mainland. In addition to transporting mined aggregate from the proposed mining area to the plant, the conveyors would also house the cables needed to provide electricity to power the floating dredge unit. The floating conveyor system would connect to landing points, each approximately 1-acre in size, to connect the floating conveyors to the existing land-based conveyor system within the boundaries of the existing facility. Additional footings may need to be installed to support the conveyor system as it makes this transition to upland.

As mining continues, an increasingly large basin would be created. Barrier dikes would be constructed between the first and third of the USACE-created barrier islands to protect the active mining area from flood debris, ice, and excessive sedimentation (**Figure 5**). Hydrologic analyses previously completed for the proposed Project indicated that deepening the basin would provide enough increased storage capacity such that construction of the barrier dikes would not cause a change in flood elevations upstream. This analysis would be refined as part of Project permitting.

### **Material Processing**

Material processing would rely on the existing Nelson Sand & Gravel Mine Facility and processing plant infrastructure.

Materials mined as part of the proposed Project would be dewatered within the dredge unit itself as it is brought to the surface and transported by conveyor to the existing Nelson Sand & Gravel Mine Facility's main processing plant where it would be crushed, screened, and washed before being loaded onto barges for transport to the marketplace in a manner similar to existing site operations. In the main processing plant, mined materials would be transferred through a heavy steel screen to separate larger rocks from smaller rocks and sand. The larger rocks would be periodically transferred into a primary crusher, where they would be reduced in size. Surplus sand, which comprises approximately half of the aggregate reserve in the proposed mining area, would be separated from other sand and gravel materials as it passes through a series of vibrating screens. This surplus sand would be used for the construction of the barrier dikes and also in the reclamation process, as described below in the Reclamation section.

The proposed Project seeks to permit an additional 21 million tons of aggregate reserves

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located in the backwaters of the Mississippi River. At the current annual production rate of 650,000 to 700,000 tons of aggregate materials per year, the additional reserves would provide 20 to 25 years of reserve life. These annual volumes are dependent upon market demand in any given year. Current mining means and methods at the Nelson Sand & Gravel Mine Facility would be employed to mine the newly permitted reserves. Processing techniques, processing equipment, equipment run rates, hours of operation, and facility staffing at the existing Nelson Sand & Gravel Mine Facility would all remain unchanged. In addition, the current river-based transportation system would remain unchanged; assuming consistent market conditions, barge capacities and annual trips are expected to remain the same. Barges would continue to be loaded at the existing dock wall location of the Nelson Sand & Gravel Mine Facility using the same equipment.

### **Project Phasing**

The proposed mining area would be developed in four phases (**Figure 6**). The floating dredge unit would be moved to the proposed mining area and the conveyor network would be constructed prior to the initiation of mining. Mining would begin in the western portion of the proposed mining area within an approximately 35-acre area and would last up to three years. From there, mining would extend to the east in three subsequent phases: an approximately 55-acre area in years 4 through 8; an approximately 65-acre area in years 9 through 13; and an approximately 75-acre area in years 14 through 20.

### **Reclamation**

Reclamation would occur in phases, with reclamation of a mined-out area occurring simultaneously with the commencement of mining a new phase of the proposed Project area. It is anticipated that reclamation would occur approximately five to ten years after beginning a mine phase. Reclamation would consist of using surplus sand to backfill underwater excavation areas near the shoreline of the mainland and adjacent to the barrier islands to stabilize areas and create underwater slopes that are stable, resilient to erosion, and safe. The central portion of the proposed mining area would be filled with excess sand generated and stockpiled from aggregate processing, resulting in an approximately 100-foot-deep waterbody.

c. Project magnitude:

**Table 3** provides a summary of the proposed Project's magnitude.

**Table 3 Project Magnitude Summary**

Component	Applicability
Total project acreage	395
Linear project length	N/A
Number and type of residential units	N/A
Commercial building area (in square feet)	N/A
Industrial building area (in square feet)	N/A
Institutional building area (in square feet)	N/A
Other uses—specify (in square feet)	N/A
Structure height(s)	N/A

- d. Explain the project purpose; if the project will be carried out by a governmental unit, explain the need for the project and identify its beneficiaries.

The existing Nelson Sand & Gravel Mine Facility will exhaust its current minable reserves in approximately five years given the current rate of mining, market trends, and geologic variations at the site. The proposed Project seeks to move its mine area, which supports the existing Nelson Sand & Gravel Mine Facility, to mine additional reserves on a privately owned parcel of land in the backwaters area of the Mississippi River. The proposed Project would provide a continued local supply of construction-quality aggregate to the Twin Cities and other local markets for an additional 20 to 25 years. Project beneficiaries include proponents of projects that require aggregate materials, such as roadway and other infrastructure projects, by providing a local aggregate source. Aggregate Industries also benefits from the proposed Project by continuing to mine adjacent to its existing operations which allows for continued use of existing processing and material transport facilities rather than construction of new facilities at a new location.

- e. Are future stages of this development including development on any other property planned or likely to happen?  Yes  No

If yes, briefly describe future stages, relationship to present project, timeline and plans for environmental review.

- f. Is this project a subsequent stage of an earlier project?  Yes  No

If yes, briefly describe the past development, timeline, and any past environmental review.

Aggregate Industries has been mining at the existing Nelson Sand & Gravel Mine Facility since the early 1950s. The current operation has been in place since 1995 using a twin-clamshell, floating dredge unit to excavate raw aggregate materials from a created lake located on Lower Grey Cloud Island. No past environmental review for the existing mine has been completed. A

Scoping EAW for the proposed Project was initiated in 2007. A Scoping Decision Document was published in April 2008, leading to the preparation of a Draft Environmental Impact Statement (EIS). A Draft EIS was developed to the point where a preliminary version was made available to participants of the proposed Project’s Technical Advisory Committee. Aggregate Industries made a business decision to pause the proposed Project in Fall 2010 before the Draft EIS was published for public review and comment. This Scoping EAW, which evaluates the same proposed Project scope as the Draft EIS previously reviewed by the Technical Advisory Committee, is being prepared to re-initiate the proposed Project’s EIS process.

## 7. Cover Types

Estimate the acreage of the site with each of the following cover types before and after development:

An assessment of land cover types was estimated using Geographic Information System (GIS) based on 2015 land cover data from the University of Minnesota [reference (1)]; the results are summarized in **Table 4**.

**Table 4 Summary of Cover Types (in acres)**

Cover Type	Existing Land Cover	During Construction	After Reclamation
Industrial (Conveyors/Buildings) and Access	0.8	14.5	0.8
Forested	37.1	27.9	37.1
Wetlands/Open Water	333.3	324.5	333.3
Grassland/Shrubland	31.0	19.6	31.0
Barrier Dikes	0	8.2	0
<b>Total Area</b>	<b>394.7</b>	<b>394.7</b>	<b>394.7</b>

## 8. Permits and Approvals Required

List all known local, state, and federal permits, approvals, certifications, and financial assistance for the project. Include modifications of any existing permits, governmental review of plans and all direct and indirect forms of public financial assistance including bond guarantees, Tax Increment Financing, and infrastructure. *All of these final decisions are prohibited until all appropriate environmental review has been completed. See Minnesota Rules, Chapter 4410.3100.*

**Table 5** lists the permits and approvals required for the proposed Project.

**Table 5 Permits and Approvals to be Required or Modified**

Unit of Government	Type of Application	Status
United States Army Corps of Engineers	<ul style="list-style-type: none"> <li>Section 10</li> <li>Section 404</li> <li>Section 106</li> </ul>	<ul style="list-style-type: none"> <li>New permit to be obtained</li> <li>New permit to be obtained</li> <li>Tribal coordination will be conducted by USACE</li> </ul>
United States Fish and Wildlife Service	<ul style="list-style-type: none"> <li>Endangered Species Act section 7 consultation (required for Section 404/Section 10 process)</li> </ul>	<ul style="list-style-type: none"> <li>To be completed</li> </ul>
Minnesota Pollution Control Agency	<ul style="list-style-type: none"> <li>NPDES/SDS Construction Stormwater Permit, if needed</li> <li>Air Permit</li> <li>Section 401 Water Quality Certification (required for Section 404/10 process)</li> <li>Individual Stormwater Permit MN0001309</li> <li>Spill Prevention Control and Countermeasures Plan</li> </ul>	<ul style="list-style-type: none"> <li>Existing permit to be modified</li> <li>Existing permit to be modified, if needed</li> <li>Existing permit to be modified</li> <li>Existing permit to be modified</li> <li>Existing plan to be modified</li> </ul>
Minnesota Department of Natural Resources	<ul style="list-style-type: none"> <li>Work in Public Water</li> <li>Mississippi River Corridor Critical Area (MRCCA) – Land Alteration Permit</li> <li>MRCCA – Vegetation Clearing Permit</li> </ul>	<ul style="list-style-type: none"> <li>New permit to be obtained</li> <li>New permit to be obtained.</li> <li>New permit to be obtained.</li> </ul>
State Historic Preservation Office	<ul style="list-style-type: none"> <li>Section 106 Concurrence (required for Section 404/10 process)</li> </ul>	<ul style="list-style-type: none"> <li>New permit to be obtained</li> </ul>
City of Cottage Grove	<ul style="list-style-type: none"> <li>Mining Permit</li> </ul>	<ul style="list-style-type: none"> <li>Existing permit to be modified</li> </ul>
South Washington Watershed District	<ul style="list-style-type: none"> <li>Wetland Conservation Act</li> </ul>	<ul style="list-style-type: none"> <li>New permit to be obtained</li> </ul>

Cumulative potential effects may be considered and addressed in response to individual EAW Item Nos. 9-18, or the RGU can address all cumulative potential effects in response to EAW Item No. 19. If addressing cumulative effect under individual items, make sure to include information requested in EAW Item No. 19.

All potential cumulative impacts are discussed in EAW Item 19 (Cumulative Potential Effects).

**9. Land Use**

a. Describe:

- i. Existing land use of the site as well as areas adjacent to and near the site, including parks, trails, prime or unique farmlands.

Prior to the installation of Lock and Dam #2 in 1930, the proposed Project area was primarily used as agricultural pastureland. After construction of this lock and dam the majority of the proposed Project area was flooded and now is covered by open water that serves as a

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backwaters area of the Mississippi River.

The adjacent land use includes open water to the south with forested and industrial land use to the north (**Figure 7**). The existing Nelson Sand & Gravel Mine Facility is located to the north and northwest of the proposed Project area. The Minnesota District of the United Pentecostal Church International's (UPCI's) Camp Galilee is situated to the north of the proposed Project area. In addition, two residences owned by Aggregate Industries are located immediately north of the proposed Project area, and a third privately owned residence is located on the eastern most portion of island, north of the proposed Project area. Land use south of the proposed Project area includes Spring Lake and the main channel of the Mississippi River. Spring Lake Regional Park is located on the opposite side of the river approximately 0.40 miles southeast of the proposed Project area.

- ii. Plans. Describe planned land use as identified in comprehensive plan (if available) and any other applicable plan for land use, water, or resources management by a local, regional, state, or federal agency.

According to the *Cottage Grove 2040 Comprehensive Plan* [reference (2)], current land use in the proposed Project area is classified as water, undeveloped, extractive, and park, recreational or preserve (**Figure 8**). The 2040 Comprehensive Plan also designates future land use categories for future development. According to the Plan, the proposed Project area is classified under the transitional planning, open water, and parks/open space future land use categories (**Figure 8**). Areas designated under the Transitional Planning category need additional planning efforts prior to establishing future land use designations. Washington County and the City of Cottage Grove (City) developed the *Grey Cloud Island Regional Park Master Plan* to address future land use of Grey Cloud Island, which includes the proposed Project area. This plan was adopted by the Metropolitan Council in 1994.

As discussed in Chapter 9 of the *Cottage Grove 2040 Comprehensive Plan*, the City has prepared regulations that permit the extraction of aggregate resources. The City has established the I-4 Commercial Excavation Zoning District, which provides for the extraction of sand, gravel, and other mineral deposits or materials. The district also seeks to permit other land uses as long as they will not conflict with adjacent land uses. Finally, the City has a mining chapter which regulates the effects of environmental factors related to mining and ensures the restoration of the mined area and conformity with both the critical area and comprehensive plans.

The *Washington County 2040 Comprehensive Plan* [reference (3)] recognizes the need for aggregate mining in Washington County and notes the following goals:

- Washington County will work with landowners and local communities to reserve enough potentially productive aggregate areas from development to meet long-term regional



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needs.

- Washington County has identified mineral deposits having significant economic potential and discourages encroachment of development in those areas.
- All mining is conducted in accordance with the County's mining ordinance in order to provide for orderly, economic, and safe removal and processing of sand, gravel, rock, and soil and reclamation of the mined sites.

The Washington County Comprehensive Plan incorporates the *Grey Cloud Island Regional Park Master Plan* [reference (4)] in the *Recreation and Open Space System Plan*. The Park Master Plan identifies the importance of mining and anticipates the compatibility of mining and park development as follows:

- Manage future extension of gravel mining to balance economic benefits, environmental impact, and its reuse potential.
- Pursue active re-vegetation of mined areas with wood species as a complement to future reuse.
- Cooperate in developing mining operations and reclamation plans consistent with future reuse potential and park development.
- Preserve the aesthetic and physical integrity of the Lower [Grey Cloud] Island shoreline intact without physical interruption.
- Maintain the Lower Island barge terminal operation through completion of mining activities.

The National Park Service (NPS) Mississippi National River and Recreational Area (MNRRA) *Comprehensive Management Plan* outlines various goals, policies, and actions for management of development and uses in the river corridor [reference (5)]. Several goals and policies support the proposed mining and barging activities:

- The river system will continue to provide commercial navigation to and from the region including larger local movement of sand, gravel, and petroleum products.
- The Plan recognizes the Mississippi River as a working river particularly for movement of agricultural, construction, and energy commodities and to balance the needs of commercial and recreational river traffic.
- The Plan relies on local jurisdictions to determine uses and development consistent with MNRRA objectives.

The *Mississippi River Corridor Critical Area* (MRCCA) program is a state, regional, and local government program that provides coordinated land planning and regulation for the 72-mile stretch of the Mississippi River [reference (6)]. The City is responsible for administering MRCCA

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plans and zoning regulations within the proposed Project area and is currently in the process of developing its ordinance for regulating the MRCCA area.

- iii. Zoning, including special districts or overlays such as shoreland, floodplain, wild and scenic rivers, critical area, agricultural preserves, etc.

The proposed Project area is located within the City's Commercial Excavation District (**Figure 9**). This district allows for the extraction of sand, gravel, and other mineral deposits or materials. As noted above in EAW Item #8, Aggregate Industries' Mining Permit would be modified for the proposed Project. The area directly north of the proposed Project area is zoned as rural residential. There are two residences owned by Aggregate Industries and a third residence owned by a private party located in this area. Additionally, the Minnesota District UPCI operates Camp Galilee, a campground and retreat facility nearby.

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (**Figure 10**) depicts the proposed Project area as primarily located within the Mississippi River floodway and 100-year floodplain. A small portion of the proposed Project area is located within the 500-year floodplain.

The proposed Project area is also located in MRCCA-designated Shore Impact Zone, Natural Drainageway, Bluff Impact Zone, and Rural and Open Spaces (ROS) District. This district is characterized by rural and low-density development patterns and land uses. It includes land that is riparian or visible from the river as well as large, undeveloped tracts of high ecological and scenic value, floodplain, and undeveloped islands. The City is currently in the process of updating their MRCCA zoning regulations to be consistent with MRCCA rules adopted in 2017; these rules establish new districts and standards.

There are no designated wild and scenic rivers or agricultural preserves in the proposed Project area.

- b. Discuss the project's compatibility with nearby land uses, zoning, and plans listed in Item 9a above, concentrating on implications for environmental effects.

The proposed Project would be compatible with the existing zoning and comprehensive plans previously described in EAW Item 9a. The identified comprehensive plans acknowledge the importance and value of aggregate mining to the local economy. As mentioned in EAW Item 9a, the proposed Project area is zoned for commercial excavation and is located directly adjacent to the existing Nelson Sand & Gravel Mine Facility.

The proposed Project is less compatible with the adjacent rural residential land use. However, this land use is already adjacent to an existing mining operation (the Nelson Sand & Gravel Mine Facility). Given the separation distances and the noise and dust control measures currently

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employed, the impact on the adjacent land uses is proposed to remain similar to that experienced under current conditions. Additional information regarding Project-generated noise and dust can be found in EAW Items 16 and 17 below.

- c. Identify measures incorporated into the proposed project to mitigate any potential incompatibility as discussed in Item 9b above.

The proposed Project would be compatible with the City's and County's comprehensive plans. Aggregate Industries would work with local, state, and federal regulators during the Project permitting phase to identify minimization measures to mitigate Project effects on adjacent land use, as appropriate.

## 10. Geology, Soils and Topography/Land Forms

- a. Geology – Describe the geology underlying the project area and identify and map any susceptible geologic features such as sinkholes, shallow limestone formations, unconfined/shallow aquifers, or karst conditions. Discuss any limitations of these features for the project and any effects the project could have on these features. Identify any project designs or mitigation measures to address effects to geologic features.

The bedrock formations in the proposed Project area include the St. Lawrence and Franconia Formations [reference (7)]. The St. Lawrence Formation consists of dolomitic shale and siltstone. The Franconia Formation is composed of very fine-grained glauconitic sandstone in southern Washington County.

Surficial geology in the proposed Project area consists of lower terraces, which contain coarse sand and gravel, that are capped in places by as much as 10 feet of loamy sand [reference (8)]. Much of the sand and gravel deposit, both currently mined at the existing Nelson Sand & Gravel Mine and to be mined in the proposed Project area, are a result of deposition from Glacial River Warren that carried meltwater from the northwest portion of Minnesota. No susceptible geologic features are known to occur in the vicinity of the proposed Project area.

As summarized above in EAW Item 6, an extensive sand and gravel deposit would be mined across the 230-acre proposed mining area (**Figure 5**). Ultimately, mining would reach a depth of up to 200 feet and up to 21 million tons of aggregate would be mined across the 20- to 25-year life of the proposed Project. As summarized above in EAW Item 6, reclamation would occur in phases, with reclamation of a mined-out area occurring simultaneously with the commencement of mining a new phase of the proposed Project area. Reclamation would consist of backfilling excavated underwater areas adjacent to the shoreline of the mainland and adjacent to the barrier islands to create underwater slopes that are stable, resilient to erosion, and safe. The central portion of the proposed mining area would be filled with excess sand generated and stockpiled

from aggregate processing, resulting in an approximately 100-foot-deep waterbody.

- b. Soils and topography – Describe the soils on the site, giving NRCS (SCS) classifications and descriptions, including limitations of soils. Describe topography, any special site conditions relating to erosion potential, soil stability or other soils limitations, such as steep slopes, highly permeable soils. Provide estimated volume and acreage of soil excavation and/or grading. Discuss impacts from project activities (distinguish between construction and operational activities) related to soils and topography. Identify measures during and after project construction to address soil limitations including stabilization, soil corrections or other measures. Erosion/sedimentation control related to stormwater runoff should be addressed in response to Item 11.b.ii.

The barrier islands at the southern end of the proposed Project area range from 648 to 746 feet above mean sea level (AMSL). In the proposed mining area, depth to channel bottom below the water surface ranges from a few feet to 10 feet deep.

The U.S. Department of Agriculture (USDA) - Natural Resource Conservation Service (NRCS) Soil Survey of Washington County was reviewed to identify the soils within the proposed Project area [reference (9)]. **Table 6** identifies the soil map units within the proposed Project area. The dominant soil map unit in the proposed mining area is water, with the barrier islands along the southern border consisting of Alganssee loamy sand.

**Table 6 Soils within Proposed Project Area**

Soil Map Unit	Acres in Proposed Project Area
Water	284.9
Alganssee loamy sand	36.7
Hubbard loamy sand, 1-6% slopes	34.9
Chaska silt loam	20.4
Udifulvents	15.3
Sparta loamy sand, 0-2% slopes	2.5
<b>Total acres</b>	<b>394.7</b>

The mining operations would be conducted from a floating dredge to extract underwater reserves. No surface soils would be disturbed by the actual underwater mining. However, the floating conveyor system, as discussed in EAW Item 6, would require the construction of landing points (each approximately 1 acre in size) from the proposed mining area to connect to the existing land-based conveyor system. In addition, excavation would be required for cutting a temporary channel to move the floating dredge into the proposed mining area and for

developing winter slips. In addition, small amounts of soil disturbance would be required for installation of footings in upland areas to support the conveyor system. Applicable best management practices (BMPs), such as silt fencing, would be employed to minimize erosion from these areas. The topsoil from these activities would be stored on upland in small berms and would be used for reclaiming the landing points and barge slips once they are no longer needed. Following completion of the proposed Project, upland areas would be re-graded and seeded.

## 11. Water Resources

- a. Describe surface water and groundwater features on or near the site in a.i. and a.ii. below.
  - i. Surface water – lakes, streams, wetlands, intermittent channels, and county/judicial ditches. Include any special designations such as public waters, trout stream/lake, wildlife lakes, migratory waterfowl feeding/resting lake, and outstanding resource value water. Include water quality impairments or special designations listed on the current MPCA 303d Impaired Waters List that are within 1 mile of the project. Include DNR Public Waters Inventory number(s), if any.

The proposed Project area is located within the backwaters of the Mississippi River between Grey Cloud Slough and Spring Lake (**Figure 11**). The Mississippi River and backwaters area account for approximately 283.3 acres, or roughly 71 percent, of the proposed Project area. The Minnesota Department of Natural Resources (MDNR) Public Water Inventory defines this area as part of the U.S. Lock and Dam #2 Pool (main channel). The segment of the Mississippi River from Upper St. Anthony Falls to the St. Croix River, in which the proposed Project is located, is listed as impaired for aquatic consumption, aquatic life, and aquatic recreation. There are no trout streams, wildlife lakes, migratory waterfowl feeding/resting lakes, or outstanding resource value waters within or adjacent to the proposed Project area.

According to the Minnesota Wetland Inventory Data, the proposed Project area includes 334.7 acres of wetlands. The majority of the wetlands (292.3 acres; approximately 87% of total wetlands within the Project area) are classified as riverine, shallow open water wetlands (R2UB/US/AB). These wetlands are typical of those found in the backwaters of the Mississippi River. The second most dominant wetland type is freshwater forested wetlands (36.3 acres; approximately 11% of the wetlands; PFO1A). The remaining wetland areas include shallow open water and shrub wetlands (3.2 acres; approximately 1% of the wetlands; PSS1A/C) and freshwater emergent wetlands (2.9 acres; approximately 1% of the wetlands; PEM1A/C).

- ii. Groundwater – aquifers, springs, seeps. Include: 1) depth to groundwater; 2) if project is within a MDH wellhead protection area; 3) identification of any onsite and/or nearby wells, including unique numbers and well logs if available. If there are no wells known

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on site or nearby, explain the methodology used to determine this.

The proposed Project area is located partially within the Mississippi River, which is a major regional discharge zone for groundwater. Groundwater in Washington County generally flows in an easterly direction towards the Mississippi River. Most of the proposed Project area consists of open water, and the adjacent upland locations have a shallow depth to groundwater. According to the Minnesota Hydrology Atlas [reference (10)], the depth to water table in the proposed Project area ranges from 0 to 20 feet.

There are no Minnesota Department of Health (MDH) Wellhead Protection Areas within the proposed Project area. According to the MDH County Well index [reference (11)], no groundwater wells are located within the proposed Project area. The closest groundwater well (Well ID 257677) is located approximately 180 feet north of the proposed Project area. This well was installed in January 2014 and is currently in use.

- b. Describe effects from project activities on water resources and measures to minimize or mitigate the effects in Item b.i. through Item b.iv. below.
  - i. Wastewater – For each of the following, describe the sources, quantities and composition of all sanitary, municipal/domestic, and industrial wastewater produced or treated at the site.
    - 1) If the wastewater discharge is to a publicly owned treatment facility, identify any pretreatment measures and the ability of the facility to handle the added water and waste loadings, including any effects on, or required expansion of, municipal wastewater infrastructure.
    - 2) If the wastewater discharge is to a subsurface sewage treatment systems (SSTS) describe the system used, the design flow, and suitability of site conditions for such a system.
    - 3) If the wastewater discharge is to surface water, identify the wastewater treatment methods and identify discharge points and proposed effluent limitations to mitigate impacts. Discuss any effects to surface or groundwater from wastewater discharges.

The proposed Project would not produce any sanitary, municipal/domestic, or industrial wastewater beyond those currently produced at the existing Nelson Sand & Gravel Mine Facility. The existing Nelson Sand & Gravel Mine Facility has a septic system and wells; there are no city sewer connections or discharge. As described in the Project Description (EAW Item 6), there will be no change to the wastewater system from the existing project to the proposed Project.

- ii. Stormwater – Describe the quantity and quality of stormwater runoff at the site prior to

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and post construction. Include the routes and receiving water bodies for runoff from the site (major downstream water bodies as well as the immediate receiving waters). Discuss any environmental effects from stormwater discharges. Describe stormwater pollution prevention plans including temporary and permanent runoff controls and potential BMP site locations to manage or treat stormwater runoff. Identify specific erosion control, sedimentation control or stabilization measures to address soil limitations during and after project construction.

The Mississippi River would be the receiving water for stormwater runoff from any of the proposed Project activities.

During construction, impacts to uplands associated with the proposed Project would be minor and limited to the proposed conveyor area to connect the proposed mining area to the existing Nelson Mine Facility and access roads. During the construction of the conveyor landings, silt fencing and berms would be used to minimize erosion. Where practical, drainage from these areas will be directed inland and contained within the existing Nelson Sand & Gravel Mine Facility. Any proposed access roads would be less than 20 feet wide and comprised of a gravel surface. The proposed Project would not significantly increase impervious surface area or increase stormwater runoff to the Mississippi River compared to current conditions.

Aggregate Industries would use BMPs such as silt fences or straw wattles during construction to minimize potential for erosion and sediment transport into the Mississippi River. Aggregate Industries would update the existing Nelson Sand & Gravel Mine Facility Storm Water Pollution Prevention Plan (SWPPP) to incorporate the proposed Project area. Specific BMPs used for site stabilization and sediment control during project construction would be identified in the SWPPP and detailed site plans.

- iii. Water appropriation – Describe if the project proposes to appropriate surface or groundwater (including dewatering). Describe the source, quantity, duration, use and purpose of the water use and if a DNR water appropriation permit is required. Describe any well abandonment. If connecting to an existing municipal water supply, identify the wells to be used as a water source and any effects on, or required expansion of, municipal water infrastructure. Discuss environmental effects from water appropriation, including an assessment of the water resources available for appropriation. Identify any measures to avoid, minimize, or mitigate environmental effects from the water appropriation.

The existing Nelson Sand & Gravel Mine Facility is currently operating under two water appropriation permits. Appropriation Permit #1967-0201 authorizes the withdrawal of up to 4.8 billion gallons of groundwater per year for dewatering at the existing sand and gravel pit.

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However, there has been no water appropriated under this permit since 2004. The impact of this water appropriation on the groundwater has not been quantified, although no domestic well interference has been recorded.

Appropriation Permit #2000-6135 allows Aggregate Industries to withdraw 767.4 million gallons per year from the Mississippi River (surface water) for aggregate washing at the existing Nelson Sand & Gravel Mine Facility, located on the west side of Grey Cloud Island. Except for the small volume of water that evaporates and that clings to the washed products, most of this water is pumped back into the existing mine pit area where the fines settle out and the water percolates back into the ground. Since the groundwater level under Grey Cloud Island is a very close reflection of the river water level, no impact on the groundwater levels or groundwater quality are anticipated.

The proposed Project would not require groundwater appropriation due to its location in the Mississippi River. It is likewise not expected to require a surface water appropriation for the mining activity as the mined aggregate would be dewatered directly in the river, at the location of the floating dredge unit, with the discharge returning back to the river. Since the water would not be transported outside of the river system, a new water appropriation permit for mining would not be required, and no appropriation-related impacts to surface or groundwater are anticipated.

#### iv. Surface Waters

- 1) Wetlands – Describe any anticipated physical effects or alterations to wetland features such as draining, filling, permanent inundation, dredging and vegetative removal. Discuss direct and indirect environmental effects from physical modification of wetlands, including the anticipated effects that any proposed wetland alterations may have to the host watershed. Identify measures to avoid (e.g., available alternatives that were considered), minimize, or mitigate environmental effects to wetlands. Discuss whether any required compensatory wetland mitigation for unavoidable wetland impacts will occur in the same minor or major watershed and identify those probable locations.

Impacts on wetlands can be direct or indirect, both of which can affect the type, extent, and quality of wetlands. Direct impacts include activities such as clearing, filling, or excavating wetlands to convert them to a non-wetland or a different wetland type or altering the wetland functions and values. Indirect impacts include activities that may affect wetlands but are spatially or temporally removed from the proposed action.

During construction and operation, the proposed Project would result in unavoidable direct and indirect wetland impacts. Excavation within areas of riverine shallow open water wetlands would



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result in loss of wetland as they would be converted to deep-water habitat. Construction of the barrier dikes may also result in the permanent loss of wetland from the placement of fill within the wetland boundaries. Based on National Wetland Inventory for Minnesota data it is anticipated the proposed Project would permanently impact approximately 17.7 acres of freshwater emergent wetland and 212.8 acres of open water habitat<sup>1</sup>. Project-related wetland impacts would require wetland mitigation.

Aggregate Industries will work with the South Washington Watershed District and USACE to further identify potential Project related wetland impacts and wetland mitigation requirements.

- 2) Other surface waters - Describe any anticipated physical effects or alterations to surface water features (lakes, streams, ponds, intermittent channels, county/judicial ditches) such as draining, filling, permanent inundation, dredging, diking, stream diversion, impoundment, aquatic plant removal and riparian alteration. Discuss direct and indirect environmental effects from physical modification of water features. Identify measures to avoid, minimize, or mitigate environmental effects to surface water features, including in-water Best Management Practices that are proposed to avoid or minimize turbidity/sedimentation while physically altering the water features. Discuss how the project will change the number or type of watercraft on any water body, including current and projected watercraft usage.

Direct effects to other surface waters (i.e., Mississippi River) would occur from construction of the barrier dikes during mining operations.

Barrier dikes are proposed to protect the proposed mining area from wind and wave action while minimizing sedimentation of adjacent waters. The barrier dikes would be placed between the barrier islands and Lower Grey Cloud Island (**Figure 5**) and designed such that river hydrology would not be significantly impacted. Construction of the barrier dikes would change the flow patterns, and to a lesser extent, the localized flow velocities around the existing barrier islands in the proposed mining area. The proposed mining operations are not expected to cause a reduction of flow in the main channel of the river.

After the barrier dikes are constructed, flows would increase slightly in the main channel by diverting the smaller flows that would normally flow through this backwater area. By themselves, the barrier dikes could cause an increase in flood stage. However, this impact would be offset by the material excavation associated with mining activities, which would increase the flood storage capacity of the proposed Project area. Once the mining is complete the barrier dikes could be left in-place or removed.

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<sup>1</sup>It should be noted that acreages identified in this section differ from those included in Table 4 due to use of different data sources

Potential water quality impacts from the proposed Project are anticipated to be similar to those generated by current, adjacent mining operations and would be mainly limited to the generation of suspended solids. These suspended solids will be confined to the proposed mining area by the barrier dikes which would be placed to block flow into (and thus out of) the proposed mining area. Since very little flow would be leaving the proposed mining area, suspended solids migration would also be controlled. Silt curtains could also be used, if necessary, to further control suspended solids.

## 12. Contamination/Hazardous Materials/Wastes

- a. Pre-project site conditions – Describe existing contamination or potential environmental hazards on or in close proximity to the project site such as soil or ground water contamination, abandoned dumps, closed landfills, existing or abandoned storage tanks, and hazardous liquid or gas pipelines. Discuss any potential environmental effects from pre-project site conditions that would be caused or exacerbated by project construction and operation. Identify measures to avoid, minimize or mitigate adverse effects from existing contamination or potential environmental hazards. Include development of a Contingency Plan or Response Action Plan.

The Minnesota Pollution Control Agency's (MPCA's) *What's in my Neighborhood* database was reviewed on April 28, 2021, to determine if sites with regulatory listings for contamination such as dumps, landfills, storage tanks, or hazardous liquids are located within a half-mile radius of the proposed Project (**Figure 12**). There are no identified sites of contamination within the proposed Project area; however, several sites are located nearby. The proposed Project is adjacent to the existing Aggregate Industries Nelson Sand & Gravel Mine Facility, which is identified in the MPCA's database due to presence of active storage tanks and an active National Pollutant Discharge Elimination System (NPDES) permit. The closest sites of contamination are located 2,350 feet from the proposed Project area. The Zieba and Morgan Residence is an active petroleum remediation from an active aboveground tank, and the Dakota County Acquisition Site is an active petroleum remediation leak from an underground tank.

- b. Project related generation/storage of solid wastes – Describe solid wastes generated/stored during construction and/or operation of the project. Indicate method of disposal. Discuss potential environmental effects from solid waste handling, storage, and disposal. Identify measures to avoid, minimize or mitigate adverse effects from the generation/storage of solid waste including source reduction and recycling.

The proposed Project would generate typical office and lunchroom types of trash from staffing the floating dredge unit. The proposed Project would offer recycling options for the office and lunchroom type waste streams of glass, metal, paper, and plastic. These source reduction strategies are currently in place at the existing Nelson Sand & Gravel Mine Facility. Aggregate

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Industries would continue to use the waste disposal companies under the current contracts for the existing mine.

The proposed Project would also conduct oil filter changes and routine maintenance activities on the floating dredge unit using procedures currently in effect for the existing Nelson Sand & Gravel Mine Facility.

There would be no other solid wastes generated by the proposed Project. Any future activities would be required to be completed according to strict recovery and disposal procedures prescribed in Aggregate Industries' Environmental Management System (EMS). The EMS was established to maintain compliance with federal, state, and local regulations and codes.

- c. Project related use/storage of hazardous materials – Describe chemicals/hazardous materials used/stored during construction and/or operation of the project including method of storage. Indicate the number, location, and size of any above or below ground tanks to store petroleum or other materials. Discuss potential environmental effects from accidental spill or release of hazardous materials. Identify measures to avoid, minimize or mitigate adverse effects from the use/storage of chemicals/hazardous materials including source reduction and recycling. Include development of a spill prevention plan.

Current mining means and methods at the existing plant would be employed to mine the reserves for the proposed Project. Processing techniques, processing equipment, equipment run rates, hours of operation and facility staffing at the Nelson Sand & Gravel Mine Facility will all remain unchanged. In addition, the current river-based transportation system would remain unchanged; assuming consistent market conditions, barge capacities and annual trips are expected to remain the same. Barges would continue to be loaded at the existing dock wall location of the Nelson Sand & Gravel Mine Facility using the same equipment. As a result, waste generation would remain at approximately the same as levels currently generated.

Fuels, oils, lubricants, and other materials typically used by industrial equipment would be used during construction and operations of the proposed Project. Hazardous material storage would include secondary containment of fuels during construction and operation of the proposed Project; these materials would be stored away from open water areas.

The proposed Project conveyors would require grease for lubrication, and the floating dredge unit would require grease, hydraulic oil, and gear box oil. Grease would be used for lubrication on the inside of bearings on the floating dredge unit and on the floating conveyor line. Greasing would be performed manually with staff expected to clean any residual grease following each application. Small drums of grease would be stored on the floating dredge unit inside a double-walled container to prevent potential release during storage. Consequently, the potential for impact to land or waters from grease use on the floating dredge unit or the conveyors is

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minimal. No other chemicals or hazardous materials would be needed for or generated by the proposed Project.

Refueling spills and equipment failures, such as a broken hydraulic line, could introduce contaminants into soil and surface waters during construction and operations. Employees would be present to visually monitor all fluid changes and transferring activity and the hydraulic systems would be inspected daily by employees. Observed maintenance concerns would be corrected immediately to prevent potential failures that could lead to a release. A spill could result in potentially adverse effects to on-site soils and surface waters. However, the amounts of fuel and other lubricants and oils would be limited to that needed by the equipment on-site. Aggregate Industries uses biodegradable oils in the hydraulic systems and maintains spill kits and absorbent stock on the dredge to ensure that employees can respond quickly to any release.

The proposed Project would use the existing tanks and would not require any new tanks. Aggregate Industries' existing Spill Prevention Control and Countermeasures plan would be modified for the proposed Project to help prevent the discharge of oil and control a spill should one occur. All construction and operations personnel would be trained in the measures included in this plan. Both the conveyors and the dredge unit are electric and would not require use of fuels.

- d. Project related generation/storage of hazardous wastes – Describe hazardous wastes generated/stored during construction and/or operation of the project. Indicate method of disposal. Discuss potential environmental effects from hazardous waste handling, storage, and disposal. Identify measures to avoid, minimize or mitigate adverse effects from the generation/storage of hazardous waste including source reduction and recycling.

Equipment oil changes and routine maintenance activities would be conducted on the floating dredge unit using procedures currently in effect for the existing Nelson Sand & Gravel Mine Facility. All drums of used oil would be sealed tightly and removed by boat to the shore for storage in the existing land-based shop for recycling. The used oil would be collected and properly disposed of by a MPCA-certified transporter. No other hazardous wastes would be stored or generated by the proposed Project.

### **13. Fish, Wildlife, Plant Communities, and Sensitive Ecological Resources (Rare Features)**

- a. Describe fish and wildlife resources as well as habitats and vegetation on or in near the site.

The MDNR, in collaboration with the U.S. Forest Service, developed an Ecological Classification System (ECS) for hierarchical mapping and classification of Minnesota land areas with similar

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native plant communities and other ecological features. Based on the ECS, the proposed Project area is located in the St. Paul-Baldwin Plains Subsection of the Minnesota and Northeast Iowa Morainal Section of the Eastern Broadleaf Forest Province [reference (12)]. The Mississippi River cuts through the center of this subsection. Pre-settlement vegetation was primarily comprised of oak and aspen savanna communities; tallgrass prairie and maple-basswood forest were also common.

The majority of the proposed Project area consists of open water in Lower Pool 2 of the Mississippi River. The proposed Project area is bound on the north by Lower Grey Cloud Island and on the south by barrier islands created by the USACE to deposit dredge spoils (**Figure 5**). Historically, the proposed Project area was upland; it became inundated by the impoundment created as a result of Lock and Dam #2 construction in 1930 (**Figure 4**). The existing Nelson Sand & Gravel Mine Facility already encompasses much of the central portion of Lower Grey Cloud Island. The rest of the island remains largely rural, with a patchwork of woodlands and cultivated tracts of land.

Additional forested areas are comprised of elms (*Ulmus* spp.) and red pine (*Pinus resinosa*). These forests are disturbed communities with a substantial presence of invasive buckthorn (*Rhamnus* sp.) and honeysuckle (*Lonicera* sp.). Upland grasslands in the vicinity of the proposed Project area are comprised predominantly of planted and/or non-native species. Dominant grassland species include smooth brome (*Bromus inermis*) and Kentucky bluegrass (*Poa pratensis*). As discussed under EAW Item 11, wetlands are also present in the proposed Project area.

The Mississippi River, including the proposed Project area, provides habitat for a diversity of organisms, such as fish, mussels and other aquatic invertebrates, birds, amphibians, and mammals. Studies conducted by the U.S. Geological Survey (USGS) and NPS have documented 14 species of frogs and salamanders and 8 species of turtles in the MNRRRA corridor [reference (13)]. Some of the aquatic mammals present within the MNRRRA corridor include the American beaver (*Castor canadensis*), river otter (*Lontra canadensis*), mink (*Neovison vison*), and muskrat (*Ondatra zibethicus*) [reference (13)]. The Mississippi River Flyway is the migration corridor for a significant portion of North America's waterfowl and shorebirds. According to the NPS, approximately 105 species of water-based birds are present or likely present within the MNRRRA corridor [reference (13)].

### **Fish**

Pool 2 of the Mississippi River contains a diversity of fish species and is known to have large populations of walleye (*Sander vitreus*) and sauger (*Sander canadensis*) in the area [reference (14)]. Other common fish species in Pool 2 include smallmouth bass (*Micropterus dolomieu*), largemouth bass (*Micropterus salmoides*), white bass (*Morone chrysops*), bluegill (*Lepomis*

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*macrochirus*), crappie (*Pomoxis annularis*), northern pike (*Esox Lucius*), and catfish (*Ictalurus punctatus*) [reference (14)].

## **Mussels**

Extensive mussel surveys have been conducted in the Upper Mississippi River since the establishment of zebra mussels in the early 1990s. Historically, as many as 41 freshwater mussel species, including several federally and state-listed species, were found in the MNRRA Corridor [reference (15)]. According to the MDNR Statewide Mussel Survey, 31 freshwater mussel species have been documented within 1 mile of the proposed Project area, the most common of which include: mapleleaf (*Quadrula quadrula*), threehorn wartyback (*Obliquaria reflexa*), Wabash pigtoe (*Fusconaia flava*), wartyback (*Quadrula nodulata*; state-threatened), giant floater (*Pyganodon grandis*), deertoe (*Truncilla truncata*), and fragile papershell (*Leptodea fragilis*).

- b. Describe rare features such as state-listed (endangered, threatened, or special concern) species, native plant communities, Minnesota County Biological Survey Sites of Biodiversity Significance, and other sensitive ecological resources on or within close proximity to the site. Provide the license agreement number (LA-\_\_\_\_\_) and/or correspondence number (ERDB\_\_\_\_\_) from which the data were obtained and attach the Natural Heritage letter from the DNR. Indicate if any additional habitat or species survey work has been conducted within the site and describe the results.

The U.S. Fish and Wildlife Service (USFWS) Information for Planning and Conservation (IPaC) online tool identifies five federally endangered or threatened species as potentially occurring in the vicinity of the proposed Project area. Species documented by IPaC include three federally and state endangered mussel species, Higgins' eye pearlymussel (*Lampsilis higginsii*), sheepsnose mussel (*Plethobasus cyphus*), snuffbox mussel (*Epioblasma triquetra*); the federally endangered and state watchlist rusty patched bumble bee (*Bombus affinis*); and the federally threatened and state watchlist northern long-eared bat (*Myotis septentrionalis*) (**Appendix A**). No designated critical habitat is present in the vicinity of the proposed Project area.

The three federally endangered mussel species inhabit large rivers, including the Mississippi River [reference (16)]. According to the MDNR Minnesota Natural Heritage Information System (NHIS) database (Barr License Agreement LA-986), the Higgins' eye has been documented within one mile of the proposed Project area (**Table 7**). Sheepsnose and snuffbox mussels have not been documented within one mile of the proposed Project area; however, according to the NHIS database, both species have been documented approximately four miles downstream of the proposed Project area.

The rusty patched bumble bee inhabits open areas with abundant flowers, nesting sites

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(underground and abandoned rodent cavities or clumps of grasses), and undisturbed soil for overwintering sites. According to the NHIS database, rusty-patched bumble bees have been documented within one mile of the proposed Project area (**Table 7**).

The northern long-eared bat inhabits caves, mines, and forests [reference (16)]. Forested habitat suitable for northern long-eared bat is present in the vicinity of the proposed Project area. According to the MDNR and USFWS, the nearest known hibernacula is located approximately seven miles north of the proposed Project area, in Dakota County and no known roost trees have been documented in Dakota or Washington counties [reference (17)].

The MDNR's NHIS database was reviewed in March 2021 to determine if any additional state-listed rare species have been documented in the vicinity of the proposed Project area. **Table 7** summarizes the species identified within one mile of the proposed Project area and their associated habitats in Minnesota.

Data from the MDNR Minnesota Biological Survey were reviewed to determine if any Minnesota Biological Survey Sites of Biodiversity Significance, native plant communities, Scientific Natural Areas, or other sensitive ecological resources are present within or near the proposed Project area.

As shown on **Figure 13**, several Sites of Biodiversity Significance and native plant communities are present in the vicinity of the proposed Project area. The Grey Cloud Island Beach Site of Biodiversity Significance, which is ranked "below" with regards to its biodiversity significance, borders the northern portion of the proposed mining area (**Figure 13**). A Site of Biodiversity Significance ranked "below" lacks occurrences of rare species and natural features or does not meet standards for outstanding, high, or moderate ranks [reference (19)]. These sites may include areas of conservation value at the local level, such as habitat for native plants and animals, corridors for animal movement, buffers surrounding higher-quality natural areas, areas with high potential for restoration of native habitat, or open space. A willow sandbar shrubland native plant community is mapped within this Site of Biodiversity Significance (**Figure 13**); this community has a conservation status rank of S4 (apparently secure; uncommon but not rare) [reference (20)].

**Table 7 MDNR Natural Heritage Information System Database Records within One Mile**

Scientific Name	Common Name	State Status <sup>1</sup>	Federal Status <sup>1</sup>	Habitat in Minnesota <sup>2</sup>	Habitat in Proposed Project Area
<b>MUSSELS</b>					
<i>Arcidens confragosus</i>	Rock pocketbook	END	NL	Medium to large rivers	Yes
<i>Elliptio crassidens</i>	Elephant-ear	END	NL	Large rivers	Yes
<i>Lampsilis higginsii</i>	Higgins' eye	END	END	Mississippi River and some of its large tributaries	Yes
<i>Megaloniaias nervosa</i>	Washboard	END	NL	Large rivers	Yes
<i>Reginaia ebenus</i>	Ebonysell	END	NL	Large rivers	Yes
<i>Tritogonia verrucosa</i>	Pistolgrip	END	NL	Large rivers	Yes
<i>Actinonaias ligamentina</i>	Mucket	THR	NL	Medium to large rivers	Yes
<i>Ellipsaria lineolata</i>	Butterfly	THR	NL	Large rivers	Yes
<i>Euryntia dilatata</i>	Spike	THR	NL	Small to large rivers	Yes
<i>Quadrula nodulata</i>	Wartyback	THR	NL	Large rivers	Yes
<i>Theliderma metanevra</i>	Monkeyface	THR	NL	Large rivers	Yes
<i>Truncilla donaciformis</i>	Fawnsfoot	THR	NL	Large rivers	Yes
<i>Pleurobema sintoxia</i>	Round pigtoe	SPC	NL	Medium to large rivers	Yes
<b>FISH</b>					
<i>Ictiobus niger</i>	Black buffalo	THR	NL	Sloughs, impoundments, and both fast- and slow-flowing portions of rivers	Yes
<i>Polyodon spathula</i>	Paddlefish	THR	NL	Large rivers and river lakes, oxbow lakes, and backwaters	Yes
<i>Anguilla rostrata</i>	American eel	SPC	NL	Medium to large rivers	Yes
<i>Aphredoderus sayanus</i>	Pirate perch	SPC	NL	Sloughs, ditches, and backwaters near the Mississippi River	Yes
<b>BIRDS</b>					
<i>Ammodramus henslowii</i>	Henslow's sparrow	END	NL	Uncultivated grasslands and old fields with stalks for singing perches and a substantial litter layer	Yes



Scientific Name	Common Name	State Status <sup>1</sup>	Federal Status <sup>1</sup>	Habitat in Minnesota <sup>2</sup>	Habitat in Proposed Project Area
<i>Lanius ludovicianus</i>	Loggerhead shrike	END	NL	Upland grasslands/agriculture areas where short grass vegetation and perching sites are found	Yes
<i>Vireo bellii</i>	Bell's vireo	SPC	NL	Shrub thickets, clumps, and edges within or bordering open habitats such as grasslands or wetlands.	Yes
<i>Chondestes grammacus</i>	Lark sparrow	SPC	NL	Upland grasslands with short and/or sparse grasses (usually native) in areas of sand or gravel soils, with at least some bare ground and widely-scattered or patchy trees	Yes
<b>VASCULAR PLANTS</b>					
<i>Aristida tuberculosa</i>	Seaside three-awn	THR	NL	Exclusively in dry and loose sand in sand savannas, sand prairies, and dunes where vegetation is sparse.	No
<i>Bacopa rotundifolia</i>	Waterhyssop	THR	NL	Along margins of low sandy or silty islands in the Mississippi River	Yes
<i>Besseyia bullii</i>	Kitten-tails	THR	NL	Oak savanna, dry prairies, and oak woodlands along bluffs and terraces of the St. Croix, Mississippi, and Minnesota river valleys	No
<i>Orobanche ludoviciana var ludoviciana</i>	Louisiana broomrape	THR	NL	Dry prairie or dry savanna, particularly in areas with excessively drained, loose and sandy or gravelly soil.	No
<i>Sagittaria calycina var. calycina</i>	Hooded arrowhead	THR	NL	Lake shores, riverbanks, ponds, and marshes	Yes
<i>Asplenium platyneuron</i>	Ebony spleenwort	SPC	NL	Dry mesic hardwood forests	No
<i>Cirsium pumilum var. hillii</i>	Hill's thistle	SPC	NL	Southern dry prairies and savannas, and southern mesic prairies to a lesser extent.	No
<i>Panax quinquefolius</i>	American ginseng	SPC	NL	Mature upland deciduous forests	No
<i>Triplasis purpurea var. purpurea</i>	Purple sandgrass	SPC	NL	Sand dunes	No
<b>INSECTS</b>					
<i>Hesperia</i>	Leonard's			Dry habitats on sand, including prairie and savanna, and openings in woodlands.	

Scientific Name	Common Name	State Status <sup>1</sup>	Federal Status <sup>1</sup>	Habitat in Minnesota <sup>2</sup>	Habitat in Proposed Project Area
<i>leonardus</i>	skipper	SPC	NL	Dominance of native plant species appears to be important part of habitat.	No
<i>Bombus affinis</i>	Rusty-patched bumble bee	Watchlist	END	Open areas that provide nectar and pollen from flowers, nesting sites (underground and abandoned rodent cavities or clumps of grasses), and overwintering sites for hibernating queens (undisturbed soil). <sup>3</sup>	Yes
<b>REPTILES</b>					
<i>Coluber constrictor</i>	North American racer	SPC	NL	Forested hillsides, bluff prairies, grasslands, and open woods.	Yes

<sup>1</sup>State or federal status: END = endangered; THR=threatened; SPC=special concern; NL=not listed

<sup>2</sup>With the exception of rusty-patched bumble bee, all habitat information obtained from the MDNR Rare Species Guide [reference (16)].

<sup>3</sup>Habitat information obtained from reference (18).

The Grey Cloud Dunes Scientific and Natural Area is located approximately one-half mile north of the proposed Project area (**Figure 13**). The Spring Lake Islands State Wildlife Management Area is located 0.2 miles west of the proposed mining area (**Figure 13**). In addition, several MDNR Regionally Significant Ecological Areas have been identified in areas adjacent to the proposed Project area (**Figure 13**). The MDNR identifies Regionally Significant Ecological Areas within the seven-county metropolitan area where intact native plant communities and/or native animal habitat are still found and continue to provide important ecological functions.

- c. Discuss how the identified fish, wildlife, plant communities, rare features and ecosystems may be affected by the project. Include a discussion on introduction and spread of invasive species from the project construction and operation. Separately discuss effects to known threatened and endangered species.

### **General Impacts**

The proposed Project may have indirect adverse effects on wildlife in the vicinity of the proposed Project area due to the presence of equipment and associated noise and human activity during construction and operation. The noise associated with the existing Nelson Sand & Gravel Mine Facility processing plant would continue but the existing dredge noise would shift as mining starts in the adjacent proposed mining area. Many species, even those accustomed to human proximity, could abandon habitats near the proposed Project area; however, similar habitat is abundant throughout Pool 2.

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## **Terrestrial Species Impacts**

Only minimal effects on upland vegetation are planned during construction. The majority of the proposed Project area is located within the USFWS "low potential zone" for rusty-patched bumble bees; this zone represents areas where the species is not likely to be present [reference (18)]. In order to avoid potential adverse effects on the rusty-patched bumble bee, a field survey to confirm presence of suitable habitat may need to be conducted in the Project area surrounding the westernmost conveyor prior to construction activities.

Suitable habitat for the Leonard's skipper (*Hesperia leonardus*) is not present in the proposed Project area (**Table 7**); as such, adverse effects on this species are not anticipated from the proposed Project. Suitable habitat for the North American racer (*Coluber constrictor*) is present in the proposed Project area, and the nearest documented location of a North American racer is approximately 0.9 mile north of the proposed Project area. With only minimal disturbance of suitable habitat occurring as part of the proposed Project, adverse effects to this species are not likely.

Habitat for the northern long-eared bat is present within the proposed Project area. However, tree removal is expected to be minimal and would not occur during the northern long-eared bat pup season (June 1 through July 31); as such, adverse effects to northern long-eared bats are not anticipated from the proposed Project.

Suitable habitat for the state listed terrestrial vascular plant species identified in the NHIS database, including seaside three-awn (*Aristida tuberculosa*), kitten-tails (*Besseyia bullii*), ebony spleenwort (*Asplenium platyneuron*), Louisiana broomrape (*Orobanche ludoviciana* var. *ludoviciana*), Hill's thistle (*Cirsium pumilum* var. *hillii*), American ginseng (*Panax quinquefolius*), and purple sandgrass (*Triplasis purpurea* var. *purpurea*) (**Table 7**), is not present in the proposed Project area; as such, adverse effects to these species are not anticipated from the proposed Project.

## **Wetland/Aquatic Plant Species Impacts**

The state listed aquatic/wetland vascular plant species identified in the NHIS database, including waterhyssop (*Bacopa rotundifolia*) and hooded arrowhead (*Sagittaria calycina* var. *calycina*) (**Table 7**), could be adversely affected by the proposed Project either directly during construction or due to loss of habitat during operation. Waterhyssop has been found in several locations in the vicinity of the proposed Project, including the middle of the proposed mining area and along the barrier islands at the southern end of the proposed mining area. Hooded arrowhead has been documented approximately 0.4 miles southwest of the proposed mining area; however, suitable habitat for hooded arrowhead is also present within the proposed mining area.

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### **Migratory Bird and Waterfowl Impacts**

In general, stopover habitat and potential nesting habitat for migratory birds and waterfowl would be lost in the proposed Project area as a result of construction and operation of the Project. However, loss of habitat within the Project area would not be expected to adversely affect the common migratory bird and waterfowl species, as other areas of suitable habitat are present throughout Pool 2. The state listed birds identified in the NHIS database, including Henslow's sparrow (*Ammodramus henslowii*), loggerhead shrike (*Lanius ludovicianus*), Bell's vireo (*Vireo bellii*), and lark sparrow (*Chondestes grammacus*) (**Table 7**), generally inhabit and feed in upland areas; however, they could be present along the edge of the proposed Project area.

### **Fish Impacts**

The proposed Project could adversely affect fish, including state listed species identified in the NHIS database (**Table 7**). Direct effects on fish could result from mortality during construction and operation of the proposed Project; however, the proposed mining area would remain connected to the main channel and would allow for the movement fish in and out of the area. Because they are mobile organisms, the majority of fish would likely move away from the proposed mining area during construction and operation. Indirect effects could result from loss and/or alteration of habitat due to substrate and depth changes and/or sedimentation associated with proposed mining. Areas in the depth range of 2 to 12 feet would be lost due to dredging activities. Those species that require shallower water for important life-cycle activities may be affected, but the proposed mining area would retain some nearshore shallow areas, with large areas of the backwater becoming deep water habitat. This change would benefit some species and likely be detrimental to others, such as those species that use the proposed Project area as reproductive habitat, or as rearing habitat for juvenile fish.

### **Mussel Impacts**

The proposed Project could adversely affect mussels, including the federally and state listed species identified in the NHIS database (**Table 7**). Direct effects on mussels could result from mortality during construction and operation of the proposed Project. Indirect effects could result from loss and/or alteration of habitat due to substrate and depth changes and/or sedimentation associated with proposed mining. Due to their sedentary nature, mussels have limited refugia from habitat alteration.

### **Rare Features**

The proposed Project would have minimal effects on the Grey Cloud Island Beach Site of Biodiversity Significance and the associated willow sandbar shrubland native plant community due to the ground disturbance that would be necessary for construction of the proposed conveyors and landing points. No other effects on rare features or communities are anticipated

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from the proposed Project.

### **Invasive Species**

Pool 2 currently contains several aquatic invasive species, including Eurasian water milfoil (*Myriophyllum spicatum*), flowering rush (*Butomus umbellatus*), zebra mussel (*Dreissena polymorpha*), silver carp (*Hypophthalmichthys molitrix*), and bighead carp (*Hypophthalmichthys nobilis*) [reference (14)]. Although these invasive species are already present in Pool 2, the proposed Project could further their spread as a result of equipment coming to and from the proposed Project area.

Aggregate Industries contacted Lisa Joyal, the Environmental Review Coordinator at the MDNR, on June 5, 2021, to report the results of the NHIS database review and to request MDNR concurrence on potential effects on state listed species and rare features. As of the publication of this EAW, no response has been received.

- d. Identify measures that will be taken to avoid, minimize, or mitigate adverse effects to fish, wildlife, plant communities, and sensitive ecological resources.

As discussed above in EAW Item 11 (Water Resources), potential effects on water quality would be minimized through use of applicable BMPs. To minimize the spread of terrestrial and aquatic invasive species, contractors would be required to comply with applicable Minnesota regulations, which could include measures such as cleaning construction equipment prior to arriving on site and upon leaving the site.

Potential adverse effects on mussels, including federally and state listed species, could be minimized by conducting a mussel survey prior to each phase of mining and relocating all individuals observed upstream of the proposed Project area.

Previous project planning and agency coordination efforts have developed mitigation options for the impacts from the proposed Project. The construction of islands has been previously proposed as a mitigation measure for the loss of wetland functions. The mitigation of wetland losses with the construction of created islands would also provide concurrent mitigation for migratory birds and waterfowl by providing stopover, nesting, and feeding habitat. The shallow water areas with vegetation that would result from construction of these islands would provide new areas of fish habitat areas within the windswept portions of Lower Pool 2 and provide parallel mitigation.

## **14. Historic Properties**

Describe any historic structures, archeological sites, and/or traditional cultural properties on or in close proximity to the site. Include: 1) historic designations, 2) known artifact areas, and 3)

architectural features. Attach letter received from the State Historic Preservation Office (SHPO). Discuss any anticipated effects to historic properties during project construction and operation. Identify measures that will be taken to avoid, minimize, or mitigate adverse effects to historic properties.

Grey Cloud Island and its vicinity were occupied by historic and prehistoric peoples. A study entitled *The Survey of Grey Cloud Island, Washington County, Minnesota, An Archaeological Approach* [reference (21)] details information regarding development in the Grey Cloud Island area. According to the study, prehistoric peoples probably occupied the area by at least 1000 BC. An identified site on the southeastern tip of Lower Grey Cloud Island shows remains of prehistoric (1000 BC), early woodlands (1000 BC to 600 BC), middle woodland (600 BC to AD 900), and late prehistoric (AD 900 to 1700) occupancy.

The Minnesota State Historic Preservation Office (SHPO) was contacted on March 30, 2021, to request a summary of all historic structures and archaeological sites located in the vicinity of the proposed Project. On April 1, 2021, SHPO provided data for this request. The SHPO data indicates that there are five recorded historic structures and five archaeological sites on Grey Cloud Island (**Table 8**). According to the SHPO data, only one of the archaeological sites, the Shilling Archaeological District, is listed on the National Register of Historic Places.

**Table 8 Historic and Archaeological Resources Located on Grey Cloud Island**

Property/Site Name	Township, Range, Section	Inventory #	National Register Status
<b>Historic Structures</b>			
Lower Grey Cloud Island	T26 R21W S5,6 T27 R21W S31, 32 T27 R22W S36	WA-CGC-205	Not determined
Schilling House	T27 R21W S32	WA-CGC-079	Not determined
River Beacon Farmstead	T27 R21W S31	WA-CGC-105	Not determined
Joseph R. Brown Trading Post Site	T27 R21W S31	WA-CGC-182	Not determined
J.L. Shiely Co. Nelson Plant	T27 R22W S36	WA-CGC-234	Not determined
<b>Archaeological Sites</b>			
Shilling Archaeological District	T27 R21W S32	WA-0001	Listed
Grey Cloud Mounds	T27 R22W S36	WA-0009	Not determined
Grey Cloud Town Site	T26 R21W S6	WA-0048	Not determined
Nelson Mine West	T26 R21W S6	WA-0110	Not determined
No name identified	T27 R21W S31	WAe	Not determined

None of the historic structures or archaeological sites identified by SHPO are present in the proposed mining area. In addition, underwater archaeological sampling was conducted in the mining area in 2009, with a total of 43 Ponar samples taken across the mining area [reference (22)]. Each of these Ponar samples was negative for archaeological materials [reference (22)] present in the proposed mining area. Mining is not anticipated to affect historic structures or archaeological sites because none have been identified within the mining area.

As Project design progresses, additional coordination may be required to evaluate options to avoid, minimize or mitigate potential affects to cultural resources.

## 15. Visual

Describe any scenic views or vistas on or near the project site. Describe any project related visual effects such as vapor plumes or glare from intense lights. Discuss the potential visual effects from the project. Identify any measures to avoid, minimize, or mitigate visual effects.

The Mississippi River and adjacent bluffs provide scenic views and vistas along the river corridor. According to the MRCCA, public river corridor views (PRCVs) are views toward the river from public parkland, historic properties, and public overlooks, as well as views toward bluffs from the ordinary high-water level of the opposite shore, as seen during the summer months. PRCVs are deemed highly valued by the community and worth protecting because of the aesthetic value they bring to the MRCCA. The City has identified five significant public views of the river from Cottage Grove. One of these PRCVs looks towards the proposed Project from the Grey Cloud Dunes Scientific and Natural Area, which is located approximately one-half mile north of the proposed Project area (**Figure 13**). It is anticipated that tree cover on Lower Grey Cloud Island would likely block the view of the proposed Project from this PRCV.

The existing barrier islands in the southern portion of the proposed Project area are vegetated with brush and trees, providing visual screening of the proposed Project from the river and opposite shore. For the proposed Project, barrier dikes would be constructed between the barrier islands, which would provide additional visual screening as they become vegetated.

The size of the floating dredge unit would be approximately 100 feet by 100 feet by 65 feet high, composed primarily of steel, including cranes, buckets, pumps, conveyors, and an operation room. The dredge would be lighted for nighttime operations; therefore, it would be illuminated in the dark. The light fixtures would be hooded to reduce direct glare from the light bulbs. Given its size, the dredging equipment would likely be visible from certain vantage points during the operating season, however, the visual impact from distant overlooks is expected to be minor and not substantially different from the viewshed that includes the existing Nelson Sand & Gravel Mine Facility operations.

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The proposed Project is bounded to the north by Lower Grey Cloud Island and on the south by barrier islands. Given the isolated nature of the proposed Project area, along with the very low volume of traffic traveling on roads in the area, visual impacts associated with the proposed Project are anticipated to be minor.

## 16. Air

- a. Stationary source emissions – Describe the type, sources, quantities, and compositions of any emissions from stationary sources such as boilers or exhaust stacks. Include any hazardous air pollutants, criteria pollutants, and any greenhouse gases. Discuss effects to air quality including any sensitive receptors, human health, or applicable regulatory criteria. Include a discussion of any methods used assess the project's effect on air quality and the results of that assessment. Identify pollution control equipment and other measures that will be taken to avoid, minimize, or mitigate adverse effects from stationary source emissions.

The emissions from the proposed Project's processing operations would be comparable to the existing Nelson Sand & Gravel Mine Facility dredge operation, which qualified for a general permit. The existing processing plant at the Nelson Sand & Gravel Mine Facility will be utilized to process aggregate at the same rate. No boilers, exhaust stacks, or other emission sources would be constructed as part of the proposed Project. Although the use of new equipment is not expected for the proposed Project, Aggregate Industries' existing air permit would be modified if new equipment is needed.

- b. Vehicle emissions – Describe the effect of the project's traffic generation on air emissions. Discuss the project's vehicle-related emissions effect on air quality. Identify measures (e.g., traffic operational improvements, diesel idling minimization plan) that will be taken to minimize or mitigate vehicle-related emissions.

Service roads would be needed in the proposed Project area to provide access for conveyer maintenance and for staff to access the floating dredge unit; however, the volume would be similar to what is needed for current operations, and no increase in traffic to and from the proposed mining area is anticipated compared to the existing mining operations. The proposed Project would not increase vehicle air emissions over current levels and therefore, no vehicle emissions-related changes to current air quality conditions are expected. No change in greenhouse gas emissions is anticipated between the existing project and the proposed Project due to production levels and barge/truck traffic remaining the same as discussed in the Project Description (EAW Item 6).

- c. Dust and odors – Describe sources, characteristics, duration, quantities, and intensity of dust and odors generated during project construction and operation. (Fugitive dust may be



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discussed under Item 16a). Discuss the effect of dust and odors in the vicinity of the project including nearby sensitive receptors and quality of life. Identify measures that will be taken to minimize or mitigate the effects of dust and odors.

### **Dust**

A minor amount of dust would be generated during initial construction of the service roads, parking area, and conveyor landings. Dust generation is expected to be of short duration, lasting only during construction, and is not anticipated to affect adjacent lands, businesses, or residents due to their distance from the site.

There would be no additional dust generated during mining in the proposed Project area. The sand and gravel material would be saturated when dredged from beneath the river. During the process of separating the sand and silt from the gravel, additional water would be added, and the gravel would remain wet when it is crushed. Excess sand would be stockpiled wet and stabilized in place. The grade of the generated sand is such that it contains minimal fine particles that could become airborne when dry. When final grades are established above water, these areas would be re-soiled and planted with vegetation.

### **Odors**

Similar to current operations, the proposed Project is not anticipated to generate odors.

## **17. Noise**

Describe sources, characteristics, duration, quantities, and intensity of noise generated during project construction and operation. Discuss the effect of noise in the vicinity of the project including 1) existing noise levels/sources in the area, 2) nearby sensitive receptors, 3) conformance to state noise standards, and 4) quality of life. Identify measures that will be taken to minimize or mitigate the effects of noise.

The proposed Project would use the existing floating dredge unit and conveyor system, deployed to an adjacent location. City ordinance limits mining operations to between 6:00 a.m. and 10:00 p.m. For many years, The City has granted Aggregate Industries a variance to allow the existing electric dredge to operate 24 hours per day, seven days per week. The City has allowed the dredge to operate 24 hours per day seven days per week since 1995 since the dredge was installed. Since the dredge has been in operation, one noise complaint has been received by the City, which was in 1996. Aggregate Industries was contacted by the City, and the problem was resolved in a timely manner. The dredge continues to operate 24 hours per day, seven days per week. This variance is reviewed on an annual basis by the City during the renewal of Aggregate Industries' Annual Mining Permit. The floating dredge unit is electrically powered and contains a primary crusher and a series of vibrating screens. The dredge has been fitted with

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urethane screens and the operations have been adjusted to run as quietly as possible, as required by the City.

Aggregate Industries has worked with the City to develop the noise minimization measures that are currently in place to yield minimal noise affects. The compatibility of the proposed Project with respect to noise would continue to be reviewed annually by the City as part of annual permit renewals. Since the proposed Project would use the same processing equipment and facility that is currently in operation and would not get closer to sensitive receptors (i.e., residences, schools, etc.) than it is currently, no significant impacts are expected.

## **18. Transportation**

- a. Describe traffic-related aspects of project construction and operation. Include: 1) existing and proposed additional parking spaces, 2) estimated total average daily traffic generated, 3) estimated maximum peak hour traffic generated and time of occurrence, 4) indicate source of trip generation rates used in the estimates, and 5) availability of transit and/or other alternative transportation modes.

There are currently no access roads or source of traffic within the proposed Project area. There are existing access roads to the existing Nelson Sand & Gravel Facility, and Grey Cloud Trail S is located along the northern end of the proposed Project area. The existing mine roads would provide access for conveyor maintenance and to the dredge and barge loading facilities. The existing conveyor access roads are located on either side of the existing conveyor system. Grey Cloud Trail S provides access to the two residential houses located north of the proposed Project area and to the house located to the east.

The existing roads are constructed of class 5 (crushed gravel) and asphalt millings material. These existing roads would remain in use through the duration of current mining activities and would be expanded, as needed, to provide operations and maintenance access for the proposed Project. The current operation of the floating dredge unit generates approximately four vehicle trips per day. This traffic occurs during peak hours and is generated by employees working on the dredge. Operator maintenance vehicles would be parked adjacent to conveyor lines installed as part of the proposed Project; no additional parking spaces would be required for the proposed Project. Since the proposed Project is a continuation of an existing mine, just within a new mining area, no additional employees or Project-related traffic would be generated as discussed in the Project Description (EAW Item 6).

Aggregate Industries currently transports its' product by barge from the existing Nelson Sand & Gravel Mine Facility on Grey Cloud Island to St. Paul, once per day, six days per week. The Mississippi River between Grey Cloud Island and St. Paul is heavily trafficked by various types of watercraft including commercial tows carrying various types of cargo as well as recreational

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watercraft. The proposed Project would continue to produce aggregate at a similar rate to the existing mine once mining within the current mine area ceases; as such, it would not increase Aggregate Industries' use of barges within the Mississippi River; however, it would continue this use for the next 20 to 25 years.

As discussed above in the Project Description (EAW Item 6), a typical mining and barging season requires up to 625 barge trips; this is equivalent to approximately 30,000 truck trips. As such, the proposed Project would result in a reduction of vehicle traffic volumes as compared to a land-based mining project.

- b. Discuss the effect on traffic congestion on affected roads and describe any traffic improvements necessary. The analysis must discuss the project's impact on the regional transportation system.

*If the peak hour traffic generated exceeds 250 vehicles or the total daily trips exceeds 2,500, a traffic impact study must be prepared as part of the EAW. Use the format and procedures described in the Minnesota Department of Transportation's Access Management Manual, Chapter 5 (available at: <http://www.dot.state.mn.us/accessmanagement/resources.html>) or a similar local guidance.*

Projected peak hour traffic is anticipated to remain similar to existing conditions with approximately four round trip vehicles expected per day for site access, well below the thresholds for a traffic impact study. The proposed Project would shift the mining area for Aggregate Industries and allow the Nelson Sand & Gravel Mine Facility to continue operations for the next 20 to 25 years. This would require the continued use and potential expansion of existing mine access roads, as well as continued use of barge transportation at rates similar to current conditions. However, there would be no significant increase in the current traffic levels on the regional transportation system.

## **19. Cumulative Potential Effects**

(Preparers can leave this item blank if cumulative potential effects are addressed under the applicable EAW Items)

- a. Describe the geographic scales and timeframes of the project related environmental effects that could combine with other environmental effects resulting in cumulative potential effects.

The geographic scale for assessing cumulative potential effects for the proposed Project includes Lower Pool 2 of the Mississippi River.

The timeframe for assessing cumulative potential effects includes the anticipated 20-year life of

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the proposed Project.

- b. Describe any reasonably foreseeable future projects (for which a basis of expectation has been laid) that may interact with environmental effects of the proposed project within the geographic scales and timeframes identified above.

Reasonably foreseeable future projects that are geographically and temporally similar to the proposed Project, and therefore could potentially interact with the environmental effects of the proposed Project, are limited.

The proposed Project is an extension of existing Nelson Sand & Gravel Mine Facility that has been in continuous operation since 1953. There was a substantial multi-media review of the mining in 1983 at the time of annexation to the City. This review identified a large aggregate resource under water in the area known as Baldwin Lake and the outer islands west of Lower Grey Cloud Island (**Figure 1**). These aggregate reserves are buried under several feet of sediment and are not economical to mine in today's market; however, this area could be mined in the future if the market would bear the added expense. Any future mining in this area is estimated to be approximately 20 years away. If mining would be proposed in this area, a separate environmental review would be conducted at that time. Past and current mining operations contribute to the cumulative potential effects of the proposed Project.

The landowners (PAS Associates, LTD.) of the proposed Project area and the existing Nelson Sand & Gravel Mine Facility area envision developing a mixed residential community on Lower Grey Cloud Island when all mining is completed. Washington County and the Metropolitan Council are interested in developing at least a portion of Lower Grey Cloud Island as a regional park; this development is likely to be at least 20 to 25 years in the future and is separate from the proposed Project.

- c. Discuss the nature of the cumulative potential effects and summarize any other available information relevant to determining whether there is potential for significant environmental effects due to these cumulative effects.

There is a possibility that construction of the mixed residential community planned for Lower Grey Cloud Island could occur during a portion of the 20-to-25-year design life of the proposed Project. While the proposed Project consists of a new mining area, it is a continued operation of an existing mine site with no other changes. In general, the daily operations (i.e., volume of aggregate mined, processing rates, and barge/truck traffic) are planned to be the same magnitude as the existing site as discussed in the Project Description (EAW Item 6). While the noise associated with the proposed Project would replace noise associated with the existing Nelson Sand & Gravel Mine Facility, noise associated with construction activities for the housing development could interact with the proposed Project to contribute to cumulative

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effects related to noise. While cumulative effects related to noise would not last the duration of the proposed Project, the added noise could further deter wildlife from the area within and around Lower Grey Cloud Island. However, given that the housing development would occur in an area that is currently disturbed by mining, wildlife species may already be accustomed to avoiding this location in favor of similar habitat in the area.

There is potential for cumulative environmental effects as a result of the Project; however, the significance of these cumulative effects has not yet been determined.

## 20. Other Potential Environmental Effects

If the project may cause any additional environmental effects not addressed by Items 1 to 19, describe the effects here, discuss the how the environment will be affected, and identify measures that will be taken to minimize and mitigate these effects.

The proposed Project is not anticipated to result in environmental effects beyond those described in this document.

**RGU CERTIFICATION.** *(The Environmental Quality Board will only accept **SIGNED** Environmental Assessment Worksheets for public notice in the EQB Monitor.)*

### I hereby certify that:

- The information contained in this document is accurate and complete to the best of my knowledge.
- The EAW describes the complete project; there are no other projects, stages or components other than those described in this document, which are related to the project as connected actions or phased actions, as defined at Minnesota Rules, parts 4410.0200, subparts 9c and 60, respectively.
- Copies of this EAW are being sent to the entire EQB distribution list.

**Signature:** \_\_\_\_\_

**Date:** \_\_\_\_\_

Emily Schmitz

**Title:** Senior Planner  
City of Cottage Grove

## **Appendix A**

### **U.S. Fish and Wildlife Service IPaC Species List**

# IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

## Location

Washington County, Minnesota



## Local office

Minnesota-Wisconsin Ecological Services Field Office

- (952) 252-0092
- (952) 646-2873

MAILING ADDRESS

4101 American Blvd E Bloomington, MN  
55425-1665

PHYSICAL ADDRESS

4101 American Blvd E



Bloomington, MN 55425-1665

<http://www.fws.gov/midwest/Endangered/section7/s7process/step1.html>

NOT FOR CONSULTATION

# Endangered species

**This resource list is for informational purposes only and does not constitute an analysis of project level impacts.**

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species<sup>1</sup> and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries<sup>2</sup>).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

# Mammals

NAME

STATUS

---

Northern Long-eared Bat *Myotis septentrionalis*

Threatened

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/9045>

## Clams

NAME

STATUS

Higgins Eye (pearlymussel) *Lampsilis higginsii*

Endangered

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/5428>Sheepnose Mussel *Plethobasus cyphus*

Endangered

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/6903>Snu"box Mussel *Epioblasma triquetra*

Endangered

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/4135>

## Insects

NAME

STATUS

Rusty Patched Bumble Bee *Bombus a nis*

Endangered

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/9383>

## Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

# Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>

Measures for avoiding and minimizing impacts to birds  
<http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>

Nationwide conservation measures for birds  
<http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur on the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

**Bald Eagle** *Haliaeetus leucocephalus*

Breeds Oct 15 to Aug 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/1626>

**Golden-winged Warbler** *Vermivora chrysoptera*

Breeds May 1 to Jul 20

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/8745>

**Henslow's Sparrow** *Ammodramus henslowii*

Breeds May 1 to Aug 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/3941>

**Prothonotary Warbler** *Protonotaria citrea*

Breeds Apr 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

**Red-headed Woodpecker** *Melanerpes erythrocephalus*

Breeds May 10 to Sep 10

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

**Rusty Blackbird** *Euphagus carolinus*

Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

**Willow Flycatcher** *Empidonax traillii*

Breeds May 20 to Aug 31

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/3482>

**Wood Thrush** *Hylocichla mustelina*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Probability of

# Presence Summary

Breeds May 10 to Aug 31

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

**Probability of Presence ( ) ■**



Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is  $0.25/0.25 = 1$ ; at week 20 it is  $0.05/0.25 = 0.2$ .
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

### Breeding Season ( )

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

### Survey Effort ( )

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

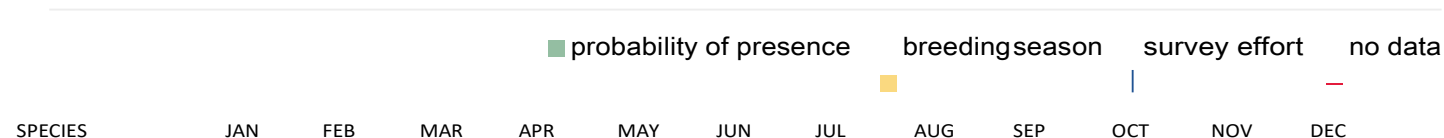
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

### No Data ( )

A week is marked as having no data if there were no survey events for that week.

### Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas of the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much sparser.



Bald Eagle  
 BCC



Vulnerable (This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in o"shore areas from certain types of development or activities.)

Golden-winged Warbler BCC  
 Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Henslow's Sparrow BCC  
 Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Prothonotary Warbler BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)




NOT FOR CONSULTATION

Red-headed Woodpecker BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Rusty Blackbird BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Willow Flycatcher BCC-BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

Wood Thrush BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

**Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.**

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

**What does IPaC use to generate the migratory birds potentially occurring in my specified location?**

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [AKN Phenology Tool](#).

### **What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?**

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

### **How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?**

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

### **What are the levels of concern for migratory birds?**

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

### **Details about birds that are potentially affected by offshore projects**

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area on the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAANCCOS Integrative](#)

[Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

### What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

### Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

## Facilities

### National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

### Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

# Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

WETLAND INFORMATION IS NOT AVAILABLE AT THIS TIME

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the [NWI map](#) to view [wetlands](#) at this location.

### **Data limitations**

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted.

Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

### **Data exclusions**

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

### **Data precautions**

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.



## **Appendix B**

### **References**

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## References

1. **University of Minnesota.** Land Cover Classification and Change Analysis. *Remote Sensing and Geospatial Analysis Laboratory*. [Online] [Cited: April 28, 2021.] <https://rs.umn.edu/land>.
  2. **Stantec.** Cottage Grove, Minnesota 2040 Comprehensive Plan. n.d.
  3. **Washington County, Minnesota.** Washington County 2040 Comprehensive Plan: A Policy Guide to 2040. October 2019.
  4. **Barton-Aschman Associates, Inc.** Grey Cloud Island Regional Park Master Plan Washington County, Minnesota. September 13, 1994.
  5. **Mississippi River Coordinating Commission; National Park Service.** Comprehensive Management Plan: Mississippi National River and Recreation Area. [Online] 1995. <https://www.nps.gov/miss/learn/management/cmp.htm>.
  6. **Minnesota Department of Natural Resources.** Mississippi River Corridor Critical Area Program (MRCCA). *Ecological and Water Resources - Water Management*. [Online] [Cited: April 26, 2021.]
  7. **Mossler, John H. and Bloomgren, Bruce A.** Geologic Atlas of Washington County, Minnesota: Bedrock Geology. *County Atlas Series Atlas C-5, Plate 2 of 7 Bedrock Geology*. s.l. : Minnesota Geological Survey, 1990.
  8. **Meyer, Gary N., Baker, Robert W. and Patterson, Carrie J.** Geology Atlas of Washington County, Minnesota: Surficial Geology. *County Atlas Series Atlas C-5, Plate 3 of 7 Surficial Geology*. s.l. : Minnesota Geological Survey, 1990.
  9. **U.S. Department of Agriculture Natural Resources Conservation Service.** Web Soil Survey. [Online] <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>.
  10. **Adams, Roberta.** Minnesota Hydrogeology Atlas: Depth to Water Table. *Minnesota Hydrogeology Atlas Series Atlas HG-03, Plate 2 of 2 Dept to Water Table*. s.l. : Department of Natural Resources, 2016.
  11. **Minnesota Department of Health.** Minnesota Well Index (MWI). [Online] [Cited: April 27, 2021.] <https://mnwellindex.web.health.state.mn.us/>.
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12. **Minnesota Department of Natural Resources.** St. Paul-Baldwin Plains and Moraines Subsection. *Ecological Classification System*. [Online] <https://www.dnr.state.mn.us/ecs/222Md/index.html>.
13. **Lafrancois, Brenda Moraska, Vana-Miller, David L. and Johnson, Steven P.** Water Resources Information and Issues Overview Report: Mississippi National River and Recreation Area. s.l. : National Park Service U.S. Department of the Interior, March 2007. Natural Resource Technical Report NPS/NRWRD/NRTR—2007/364.
14. **Minnesota Department of Natural Resources.** Mississippi River Pool 2. *East Metro area fisheries*. [Online] [Cited: March 31, 2021.] <https://www.dnr.state.mn.us/areas/fisheries/eastmetro/rivers/pool2.html>.
15. **Kelner, Dan and Davis, Mike.** Final Report: Mussel (Bivalvia: Unionidae) survey of the Mississippi National River and Recreation Area Corridor, 2000-01. s.l., St. Paul, Minnesota : Minnesota Department of Natural Resources, Division of Ecological Services, July 2002. p. 43. Contract report to the National Park Service Mississippi National River and Recreation Area and the Great Lakes Network Inventory and Monitoring Program.
16. **Minnesota Department of Natural Resources.** Rare Species Guide. *Nature - Minnesota's endangered, threatened, and special concern species*. [Online] <https://www.dnr.state.mn.us/rsg/index.html>.
17. **Minnesota Department of Natural Resources; U.S. Fish and Wildlife Service.** Townships Containing Documented Northern Long-Eared Bat (NLEB) Maternity Roost Trees and/or Hibernacula Entrances in Minnesota. June 7, 2021.
18. **U.S. Fish and Wildlife Service Midwest Region.** Rusty Patched Bumble Bee Map: Where the rusty patched bumble bee may be present. [Online] March 18, 2021. <https://www.fws.gov/midwest/endangered/insects/rpbb/rpbbmap.html>.
19. **Minnesota Department of Natural Resources.** MBS Site Biodiversity Significance Ranks. [Online] [Cited: April 8, 2021.] [https://dnr.state.mn.us/biodiversity\\_guidelines.html](https://dnr.state.mn.us/biodiversity_guidelines.html).
20. —. Conservation Status Ranks for Native Plant Community Types and Subtypes. *Native Plant Community Status*. [Online] August 31, 2009. [https://files.dnr.state.mn.us/natural\\_resources/npc/s\\_ranks\\_npc\\_types\\_&\\_subtypes.pdf](https://files.dnr.state.mn.us/natural_resources/npc/s_ranks_npc_types_&_subtypes.pdf).
21. **Birk, Douglas A.** *The Survey of Grey Cloud Island, Washington County, Minnesota: An archaeological approach*. s.l. : s.n., 1972.
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22. **Archaeological Research Services; Barr Engineering Co.** Report on Archaeological Phase I and II Investigations: Conducted within the Nelson Mine Expansion EIS Study Area, Lower Grey Cloud Island, Washington County, Minnesota. August 30, 2010. Prepared for: City of Cottage Grove and U.S. Army Corps of Engineers, St. Paul District.

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## Appendix C

### Figures

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